

## **INSEA - Project summary**

Sink enhancement measures could not only turn out to be instrumental to attain climate mitigation goals, but could simultaneously become a major driver of how our natural environment is managed. A thorough integrated economic and environmental assessment of the economic and sustainable potentials in the area of land use change in agriculture and forestry has not yet been carried out. In order to support the international negotiation process and for the development of good policies the Integrated Sink Enhancement Assessment (INSEA) project's objective is to develop an analytical tool to assess economic and environmental effects for enhancing carbon sinks and greenhouse gas abatement measures on agricultural and forest lands. The approach is centered on spatially explicit databases that will allow the calculation of "cost-landscapes" taking on an engineering approach to integrated costs computation of additional sink enhancement measures and negative emission technologies. The various model structures will be applied to detailed European data sets and less detailed global data sets assessing cost functions and long-term scenarios of sink enhancement measures. Concise policy conclusions from the modeling exercise will aim at supporting the implementation of the Kyoto Protocol commitments as well as post Kyoto negotiations. In the proposal we advocate a spatially explicit approach that is motivated by the fact that LULUCF activities are, by their very nature, spatial. We propose a deterministic approach for the cost calculations as well as a dynamic, and uncertainty (risk)-based assessment in a multiple input/output environment. We believe that such a multi-faceted approach is necessary to guarantee robustness and consistency across a variety of decision rules for sustainable greenhouse gas management of land resources.